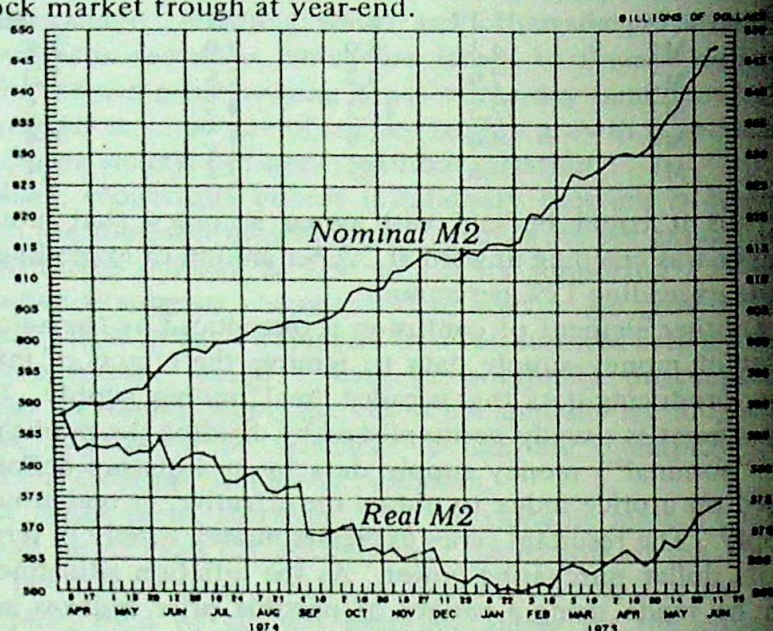


In Figures 2-3 the upper line is nominal M2, and the lower line is real M2. Although the former rose rapidly through the 1974-1975 economic recession, and during both downward and upward stock market legs, the latter paralleled the 1974 bear market decline and turned up shortly after the stock market trough at year-end.



FIGURES 2-3. Broad Money Supply (M2) — Nominal and Real (weekly); April 1974 - June 1975.

This roughly coincidental relationship with stock price trends has been repeated on numerous occasions during the last three decades, making real M2 a highly useful stock market indicator. It is important to bear in mind, however, that money supply is only a moderately good indicator of future stock price changes. Its basic value is in confirming the current trend.

The nation's money supply statistics are compiled in all their dimensions as of each Wednesday and reported by the Federal Reserve System after a lag of about nine days. Two sources within the Federal Reserve System itself provide excellent weekly summaries to the public at nominal charge.

(1) "U.S. Financial Data," Federal Reserve Bank of St. Louis, P. O. Box 442, St. Louis, Missouri 63166; and (2) "Statistical Release H.6," Board of Governors, Federal Reserve System, Washington, D. C. 20551. Many other government publications contain the data as well, but these are the two best.

6 Free Reserves

Free reserves are a measure of the liquidity of the nation's banking system. When banks are highly liquid, they have a large quantity of funds on hand for lending and are able to finance individual business growth and, ultimately, broad economic growth as well. On the other hand, when banks are fully loaned out, they are said to be illiquid and are less able to provide the financing necessary for further economic expansion.

The connection to the stock market readily follows. Economic growth translates into sales growth for individual companies, which in turn provides earnings and dividend increases, expectations of which lead to rising stock prices. Similarly, economic contractions induced by poor bank liquidity mean declining sales, earnings, and dividends, and hence a falling stock market.

All banks belonging to the Federal Reserve System (which includes most large commercial banks) are required to leave fixed portions of their deposits as reserves with the Federal Reserve Bank in their region, primarily as a safety measure. Member bank free reserves are calculated by subtracting (a) their legally required reserves, and (b) their borrowings through the Federal Reserve System, from their total cash reserves. The result can be either a negative or a positive amount, but when net free reserves are negative, they are commonly called "net borrowed reserves."

The Federal Reserve System surveys the reserve position of its member banks once a week. The banking week ends on Wednesday and the aggregate reserve position is reported to the public the following evening.

By virtue of their power to establish the minimum legal reserve requirement for their member banks, the regional Federal Reserve Banks can control the system's actual reserve position. Commercial banks tend to hold total cash reserves in an amount approximately equal to that legally required of them by the Federal Reserve System. To hold more cash than required would mean foregoing the making of income producing loans and investments. This induces banks to keep their levels of excess cash reserves very low; so low that they sometimes actually become negative. When individual banks do fall short of their required reserve levels, they must promptly raise the difference. One way is to borrow from the Federal Reserve itself. As a result, changes in the free reserve series tend to be well correlated with the banking system's volume of borrowing from the Fed.

In turn, the extent of borrowing from the Fed is highly dependent upon the relationship between the discount rate (the interest which the Fed charges banks on the money it loans to them) and other market rates of interest such as those on U. S. Treasury Bills and "federal funds." As the banks wish to maximize their profits, they usually borrow from the Fed only when it is to their financial advantage to do so; that is, when the discount rate which they must pay the Fed for borrowing is less than the rate they would have to pay for overnight borrowing from other banks in the federal funds market or the interest income they would lose if they had to sell treasury bills from their portfolio. Hence, the spread between the federal funds rate and the discount rate and the spread between the treasury bill rate and the discount rate are both closely tied to the volume of bank borrowings from the Fed and to the net free reserve position of the nation's banking system. Since net free reserves are a good predictive indicator of stock price trends, these interest

rate spreads should also be excellent stock market harbingers and, in fact, they are. (See Chapter 12, "Bills, Funds and Discounts.")

To calculate a Free Reserve indicator for market forecasting purposes, care should be exercised in its construction and testing on several counts. For example, during World War II the banking system held extremely large quantities of net free reserves as the public economized and saved their money in furtherance of the war effort. The magnitude of the free reserve position, several billion dollars, was so great as to in retrospect cast it as a "special case" and suggests the advisability of omitting that period from any statistical analysis of the series.

It should also be noted that while the net free (or borrowed) reserve position tends to revolve around zero, the overall level of the series has expanded as the nation's banking system has increased in size. This trend can be largely eliminated by dividing the dollar amount of net free (or borrowed) reserves by total bank reserves. Expressed as a percent, the Free/Total Reserve Ratio provides an excellent measure of the extent to which banks are capable or incapable of providing the funds necessary for business growth and economic expansion. Table 8 shows the average three, six, and twelve month stock market performances since World War II following a net free or net borrowed reserve position. (The actual indicator used is a ten week exponential moving average of the Free/Total Reserve Ratio.)

TABLE 8

FREE RESERVES AND MARKET PERFORMANCE (1946 - 1974)

Time Period	S&P 500 Index % Change		Probability of Rising Prices	
	Net Free Reserves	Net Borrowed Reserves	Net Free Reserves	Net Borrowed Reserves
3 months	+ 3.0%	0.0%	72%	48%
6 months	+ 6.1%	-0.3%	80%	44%
12 months	+11.4%	+0.1%	80%	46%

The post war record reveals that a net free reserve position has been followed by rising prices approximately four out of five times, while a net borrowed reserve position has more often led to a market decline than a rise.

Similar analyses demonstrate that positive changes in the Free/Total Reserve Ratio usually lead to rising stock prices, while negative changes in the ratio are more generally followed by market declines. In other words, trends toward better or worse liquidity are nearly as important as actual states of good or bad liquidity.

The best of all possible worlds, then, is a net free reserve position that is expanding. During the last 30 years, such a situation has been followed by major bull market trends 94% of the time. Conversely, a combination of net borrowed reserves and a worsening trend has been followed by major bear markets 55% of the time, a good record, but one which suggests that the indicator is more reliable when it is bullish than when it is bearish.

7 Reserve Requirements

When the Federal Reserve System really means business and desires to force a significant change in the trend of interest rates and/or the monetary aggregates, it changes the bank reserve requirement. The reserve requirement instrument is so powerful and so rarely used that a change invariably has a significant and continuing impact on stock prices.

The minimum cash reserve levels which all member banks of the Federal Reserve System must carry by law are established by the Open Market Committee of the Federal Reserve System and vary for different classes of banks. Commercial banks located in the larger metropolitan centers (known as "city banks") must maintain a greater percentage of cash reserves than banks located in less urban areas (known as

"country banks").

Commercial banks possessing different quantities of demand deposits (checking account balances) are also subject to different reserve requirements. As a general rule, the larger the bank, the higher is the required reserve ratio. Most of the nation's deposits are concentrated in a few hundred large city banks and the reserve requirement established for those banks is the most significant one. The reserve requirement on deposits in these large commercial banks has been as high as 26%, a rate established in 1948. Since then the general trend has been down and the 16.5% level set on January 20, 1975, was the lowest in forty years.

Although a comprehensive analysis requires consideration of many factors, as a general rule a given proportionate change in the reserve requirement ratio is capable of causing an equivalent change in the nation's money supply. For example, if the reserve requirement ratio is decreased from 20% to 19% — that is, by 5% in terms of the amount of the change relative to the beginning requirement — the money supply will ultimately rise by about 5%, assuming no offsetting factors.

Note the inverse relationship between the direction of the reserve requirement change and the direction in which money supply moves. The less cash banks are required to keep on hand, the more money they can lend out to foster future economic and monetary growth. Hence, decreases in the reserve requirement constitute an easing of monetary policy and are bullish for stock prices, while increases in the reserve requirement represent a tightening of monetary conditions and are viewed bearishly by the market.

Reserve Requirement Increases. Since 1936 the Federal Reserve System has announced increases in the reserve requirement for large city banks on eleven occasions. Table 9 (page 32) reveals the response of the stock market to these increases. On balance, the market has tended to commence declining within two weeks of an announced reserve requirement increase. The rate of price decline has thereafter

accelerated sharply with the largest loss in evidence fifteen months after the announcement.

TABLE 9
RESERVE REQUIREMENT INCREASES
AND MARKET PERFORMANCE

Time Period	S&P 500 Index Percent Change	Time Period	S&P 500 Index Percent Change
5 Days:	+ 0.3%	3 Months:	- 1.7%
10 Days:	- 2.3%	6 Months:	- 5.3%
15 Days:	- 0.7%	9 Months:	- 8.1%
20 Days:	- 0.3%	12 Months:	- 8.5%
		15 Months:	- 13.3%
		18 Months:	- 9.1%

Reserve Requirement Decreases. The Federal Reserve System has announced reductions in the required reserve ratio for large city banks 15 times since 1938. Almost invariably the market has responded by staging a dramatic advance. As evidenced by the summary data contained in Table 10, prices have moved upward from the very first week of the change.

TABLE 10
RESERVE REQUIREMENT DECREASES
AND MARKET PERFORMANCE

Time Period	S&P 500 Index Percent Change	Time Period	S&P 500 Index Percent Change
5 Days:	+ 0.6%	3 Months:	+ 8.2%
10 Days:	+ 1.4%	6 Months:	+ 19.9%
15 Days:	+ 1.4%	9 Months:	+ 25.2%
20 Days:	+ 1.7%	12 Months:	+ 29.0%
		15 Months:	+ 33.2%
		18 Months:	+ 37.2%

Since 1960 the Fed has deemed it wise to lower the reserve requirement for large city banks on only two occasions, each of which occurred at an exceptionally good market buying point. The Fed announced a cut on November 13, 1974, from 18% to 17½% and a still larger cut two months later on January 20, 1975, from 17½% to 16½%. The fact that stock

prices responded by staging one of the most vigorous advances in history came as no surprise to experienced Fed watchers. Previous reductions in the reserve requirement have also been announced at the generally excellent market buying points of April 1938, late summer 1942, April and August 1949, mid-1953 and 1954, early 1958, and late 1960. On every one of these occasions the market responded with a strong advance. Of the 15 reserve requirement reduction announcements, there has never been a single instance following which the market was not higher six, nine, twelve, fifteen and eighteen months later. Indeed, the market has never risen less than 20% in the eighteen months following an announced reserve requirement cut.

In conclusion, it may be stated categorically that a reduction in the reserve requirement on demand deposits for large city banks is the single most bullish event in the world of stock price behavior.

8 Discount Rate

The discount rate is the interest rate which Federal Reserve Banks charge their member banks for direct loans.

When deposit shifts cause a temporary deficiency in a commercial bank's cash reserve position, it is required to raise funds to make up for that deficiency. Three primary sources of cash are available. The bank may sell treasury bills from its portfolio, thus reducing the quantity of interest-earning assets on hand. Alternatively, it may borrow overnight deposits from other banks (in what is called the "federal funds" market), for which it must pay interest. Finally, it may borrow from the Federal Reserve System itself, using what is known as the "discount window." With this last alternative, the discount rate governs the interest the bank must pay the Federal Reserve.